

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

1-13 (Canceled)

14. (Currently Amended) An apparatus for administering carbon monoxide to a patient, the apparatus comprising a delivering unit, a carbon monoxide source connected to the delivering unit, a dosing unit connected to the delivering unit and carbon monoxide source, wherein the mass flow between the delivering unit and the carbon monoxide source is controlled by the dosing unit, ~~for administering carbon monoxide to the patient~~, sensor means for at least one sensor unit determining that determines the concentration of carbon monoxide in the patient's blood, and a control unit in communication with the sensor unit and the dosing unit, wherein the control unit regulates the dosing unit, and control means for regulating the dosing unit depending on feedback from the sensor unit, and wherein the control unit automatically compares the actual concentration of carbon monoxide in the blood with a preset desired value, and regulates the dosing unit to adjust the amount of carbon monoxide delivered to the patient to obtain a concentration in the blood corresponding to the preset desired value.

15. (Currently Amended) The apparatus according to claim 14, wherein the carbon monoxide source is a source providing pure carbon monoxide gas or carbon monoxide gas in a mixture with at least one other gas ~~and wherein the dosing unit is for administering the carbon monoxide gas or the carbon monoxide containing gas mixture into the breathing gas mixture of a patient.~~

16. (Previously Presented) The apparatus according to claim 14 wherein the delivering unit is selected from the group consisting of a respirator, a ventilator, a face mask, and a nose cannula.

17. (Currently Amended) The apparatus according to claim 14 wherein the apparatus comprises at least two independently working sensor ~~means~~ units for the determination of carbon monoxide in the blood.

18. (Currently Amended) The apparatus according to claim 14 wherein at least one of the sensor unit ~~means~~ is connected to an alarm unit.

19. (Canceled)

20. (Previously Presented) The apparatus according to claim 14 further comprising a filter unit through which the air expired by the patient is passed in order to remove excess carbon monoxide from the expired gas, wherein the filter is a physical or a chemical filter.

21. (Canceled)

22. (Previously Presented) The apparatus of claim 14, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of carboxyhemoglobin (HbCO) in the blood.

23. (Previously Presented) The apparatus of claim 14, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of oxyhemoglobin (HbO<sub>2</sub>) in the blood.

24. (Previously Presented) The apparatus of claim 14, wherein the concentration of carbon monoxide in the blood is determined by measuring the activity of enzymes in the blood.

25. (Previously Presented) The apparatus of claim 14, wherein the concentration of carbon monoxide in the blood is determined by measuring the CO content of the air expired by the patient.

26. (Previously Presented) A method for administering carbon monoxide to a patient, comprising:

- (a) administering exogenous carbon monoxide to the patient;
- (b) determining the concentration of carbon monoxide in the patient's blood;
- (c) comparing the actual concentration of carbon monoxide in the blood with a preset, desired value; and
- (d) subsequently adjusting the amount of carbon monoxide delivered to the patient to obtain a concentration in the patient's blood corresponding to the preset desired value, wherein steps (a) through (d) are performed using the apparatus of claim 14.

27. (Previously Presented) The method of claim 26, wherein steps (b) through (d) are repeated at least once.

28. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of carboxyhemoglobin (HbCO) in the blood.

29. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of oxyhemoglobin (HbO<sub>2</sub>) in the blood.

30. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is determined by measuring the activity of enzymes in the blood.

31. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is determined by measuring the CO content of the air expired by the patient.

32. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of HbCO in the blood by non-invasive measurement or from a blood sample.

33. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of HbO<sub>2</sub> in the blood by oxymetry.

34. (Previously Presented) The method of claim 31, wherein measuring the carbon monoxide content of the expired air is performed spectroscopically or electrochemically.

35. (Previously Presented) The method of claim 26, wherein the carbon monoxide is administered to a patient as a pure gas, in a gas mixture, dissolved in a fluid, or by administering a carbon monoxide donor.

36. (Previously Presented) The method of claim 26, wherein the carbon monoxide is administered to the patient by inhalation, by insufflation, intravenously, or rectally.

37. (Previously Presented) The method of claim 26, wherein the carbon monoxide is administered to a patient in a gas mixture by admixing it into the breathing air of a patient.

38. (Currently Amended) ~~The method of claim 26,~~ A method for administering carbon monoxide to a patient, comprising:

- (a) administering exogenous carbon monoxide to the patient;
- (b) determining the concentration of carbon monoxide in the patient's blood;
- (c) comparing the actual concentration of carbon monoxide in the blood with a preset, desired value; and
- (d) subsequently adjusting the amount of carbon monoxide delivered to the patient to obtain a concentration in the patient's blood corresponding to the preset desired value, wherein steps (a) through (d) are performed using an apparatus comprising:

a delivering unit;  
a carbon monoxide source;  
a dosing unit for administering carbon monoxide to the patient;  
a sensor for determining the concentration of carbon monoxide in the blood; and  
a controller for regulating the dosing unit depending on feedback from the sensor  
unit;

wherein the carbon monoxide is delivered for inhalation in pulses, wherein the pulses are inspiration or expiration triggered.

39. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is controlled by the oxygen content of the breathing gas.

40. (Currently Amended) ~~The method of claim 26,~~ A method for administering carbon monoxide to a patient, comprising:

(a) administering exogenous carbon monoxide to the patient;  
(b) determining the concentration of carbon monoxide in the patient's blood;  
(c) comparing the actual concentration of carbon monoxide in the blood with a preset,  
desired value; and

(d) subsequently adjusting the amount of carbon monoxide delivered to the patient to  
obtain a concentration in the patient's blood corresponding to the preset desired value, wherein  
steps (a) through (d) are performed using an apparatus comprising:

a delivering unit;  
a carbon monoxide source;  
a dosing unit for administering carbon monoxide to the patient;  
a sensor for determining the concentration of carbon monoxide in the blood; and  
a controller for regulating the dosing unit depending on feedback from the sensor  
unit;

wherein the administration of carbon monoxide is performed via sequences of pulses, wherein the number and length of the pulses in each sequence ~~and/or~~ or the number of sequences, or both, is regulated depending on the determination of the concentration of carbon monoxide in the blood.

41. (Previously Presented) The method of claim 26, wherein the patient is spontaneously breathing or artificially breathing.

42. (Previously Presented) The method of claim 26, wherein the concentration of carbon monoxide in the blood is determined by at least two separate methods of measurement.

43. (Previously Presented) A method for administering carbon monoxide to a patient, the method comprising:

- a) administering exogenous carbon monoxide to the patient by inhalation, wherein the carbon monoxide is delivered for inhalation in pulses triggered by inspiration, expiration or both;
- b) determining the concentration of carbon monoxide in the patient's blood;
- c) comparing the actual concentration of carbon monoxide in the blood with a preset, desired value; and
- d) subsequently adjusting the amount of carbon monoxide delivered to the patient to obtain a concentration in the patient's blood corresponding to the preset desired value.

44. (Previously Presented) The method of claim 43, wherein steps (b) through (d) are repeated at least once.

45. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of carboxyhemoglobin (HbCO) in the blood

46. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of oxyhemoglobin (HbO<sub>2</sub>) in the blood.

47. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is determined by measuring the activity of enzymes in the blood.

48. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is determined by measuring the CO content of the air expired by the patient.

49. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of HbCO in the blood by non-invasive measurement or from a blood sample.

50. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is determined by measuring the concentration of HbO<sub>2</sub> in the blood by oxymetry.

51. (Previously Presented) The method of claim 43, wherein measuring the carbon monoxide content of the expired air is performed spectroscopically or electrochemically.

52. (Previously Presented) The method of claim 43, wherein the carbon monoxide is administered to a patient in a gas mixture by admixing it into the breathing air of a patient.

53. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is controlled by the oxygen content of the breathing gas.

54. (Previously Presented) The method of claim 43, wherein the administration of carbon monoxide is performed via sequences of pulses, wherein the number and length of the

pulses in each sequence and/or the number of sequences is regulated depending on the determination of the concentration of carbon monoxide in the blood.

55. (Previously Presented) The method of claim 43, wherein the patient is spontaneously breathing or artificially breathing.

56. (Previously Presented) The method of claim 43, wherein the concentration of carbon monoxide in the blood is determined by at least two separate methods of measurement.

57. (New) The apparatus of claim 14, wherein the preset value is between about 0.5% to 50% carboxyhemoglobin per total hemoglobin.

58. (New) The apparatus of claim 14, wherein the preset value is between about 5% to 20% carboxyhemoglobin per total hemoglobin.

59. (New) The apparatus of claim 14, wherein the preset value is between about 5% to 15% carboxyhemoglobin per total hemoglobin.

60. (New) The apparatus of claim 14, wherein the preset value is about 8% carboxyhemoglobin per total hemoglobin.

61. (New) The method of claim 26, wherein the preset value is between about 0.5% to 50% carboxyhemoglobin per total hemoglobin.

62. (New) The method of claim 26, wherein the preset value is between about 5% to 20% carboxyhemoglobin per total hemoglobin.

63. (New) The method of claim 26, wherein the preset value is between about 5% to 15% carboxyhemoglobin per total hemoglobin.



64. (New) The method of claim 26, wherein the preset value is about 8% carboxyhemoglobin per total hemoglobin.

65. (New) The method of claim 43, wherein the preset value is between about 0.5% to 50% carboxyhemoglobin per total hemoglobin.

66. (New) The method of claim 43, wherein the preset value is between about 5% to 20% carboxyhemoglobin per total hemoglobin.

67. (New) The method of claim 43, wherein the preset value is between about 5% to 15% carboxyhemoglobin per total hemoglobin.

68. (New) The method of claim 43, wherein the preset value is about 8% carboxyhemoglobin per total hemoglobin.